L3 ANSWER 1 OF 5 USPATFULL

AB . . . and dihydrotestosterone, to enhance or cause hormone-responsive illnesses such as breast or prostatic cancer, benign prostatic hyperplasia, or hirsutism or **acne** in women. The use of the invented nutrient combinations reduces the formation or action of estradiol and dihydrotestosterone, thereby reducing. . .

SUMM . . . may also occur in humans. Such side effects may include breast and prostatic cancer, benign prostatic hyperplasia, and hirsutism or **acne** in women. Since DHEA is a metabolic precursor of androstenedione, DHEA administration may also be associated with harmful side effects.. . .

DETD . . . the subject reported no side effects associated with androgenic or estrogenic actions. There was no reported or observable changes in **acne**, hirsutism, or prostate function. The subject did report an increase in body weight of 3 kg, along with large increases. . .

CLM What is claimed is:

. . . powder thereof; (c) at least one substance having anti-DHT activity selected from the group consisting of zinc and pharmaceutically acceptable **zinc salts**; and (d) a pharmaceutically suitable carrier; wherein said androgenic testosterone precursor promotes anabolic growth while said natural product having anti-estrogen. . .

4. The composition of claim 1, wherein said pharmaceutically acceptable **zinc salt** is selected from the group consisting of the acetate, alaninate, alpha-aminobutyrate, arginate, **ascorbate**, benzoate, butyrate, beta-hydroxybutyrate, n-butyrate, carnosinate, chloride, citrate, formate, glycinate, gluconate, histidinate, iso-leucinate, iso-valinate, leucinate, lysinate, monomethionate, oxide, picolinate, propionate, succinate,. . .

. . . and tocotrienols; and (c) at least one substance having anti-DHT activity selected from the group consisting of zinc, pharmaceutically acceptable **zinc salts**, Saw palmetto berry, Pygeum africanum, Green tea, Saw palmetto berry extract, Pygeum africanum extract, Green tea extract, Tribulus terrestris extract,. . .

9. The composition of claim 7, wherein said substance having anti-DHT activity is a pharmaceutically acceptable **zinc salt** selected from the group consisting of the acetate, alaninate, alpha-aminobutyrate, arginate, **ascorbate**, benzoate, butyrate, beta-hydroxybutyrate, n-butyrate, carnosinate, chloride, citrate, formate, glycinate, gluconate, histidinate, iso-leucinate, iso-valinate, leucinate, lysinate, monomethionate, oxide, picolinate, propionate, succinate,. . .

. . . powder thereof; (c) at least one substance having anti-DHT activity selected from the group consisting of zinc and pharmaceutically acceptable **zinc salts**; and (d) a pharmaceutically suitable carrier; wherein said androgenic testosterone precursor promotes anabolic growth while said natural product having anti-estrogen. . .

19. The method of claim 17, wherein said pharmaceutically acceptable **zinc salt** is selected from the group consisting of the acetate, alaninate, alpha-aminobutyrate, arginate, **ascorbate**, benzoate, butyrate, beta-hydroxybutyrate, n-butyrate, carnosinate, chloride, citrate, formate, glycinate, gluconate, histidinate, iso-leucinate, iso-valinate, leucinate, lysinate, monomethionate, oxide, picolinate, propionate, succinate,. . .

AB A method for reducing potential adverse effects of androgenic testosterone precursors by interfering with production or action of testosterone and estrogen metabolites by nutrient combinations is described. Although androgenic testosterone precursors themselves have little or no toxicity, there is the potential for their metabolites, estradiol and dihydrotestosterone, to enhance or cause hormone-responsive illnesses such as breast or prostatic cancer, benign prostatic hyperplasia, or hirsutism or **acne** in women. The use

of the invented nutrient combinations reduces the formation or action of estradiol and dihydrotestosterone, thereby reducing potential adverse effects from increased production of these hormones following androgenic testosterone precursor administration. This may be accomplished without negating the effects of testosterone on muscle anabolism. The nutrient combinations include androstenedione, DHEA, pregnenolone, androstenediols, norandrostenedione and norandrostenediols, and natural products which reduce estrogen effects in the estrogen-responsive tissues, and substances to reduce formation of dihydrotestosterone from testosterone in prostate tissue.

ACCESSION NUMBER:	2000:121073 USPATFULL
TITLE:	Compositions and treatments for reducing potential unwanted side effects associated with long-term administration of androgenic testosterone precursors
INVENTOR(S):	Bucci, Luke R., West Valley City, UT, United States
PATENT ASSIGNEE(S):	Weider Nutrition International, Inc, Salt Lake City, UT, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6117429		20000912
APPLICATION INFO.:	US 1998-132359		19980811 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1997-55346	19970811 (60)

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Witz, Jean C.
LEGAL REPRESENTATIVE:	Parsons Behle & Latimer
NUMBER OF CLAIMS:	20
EXEMPLARY CLAIM:	1
NUMBER OF DRAWINGS:	1 Drawing Figure(s); 1 Drawing Page(s)
LINE COUNT:	1321

L3 ANSWER 4 OF 5 USPATFULL

TI Treatment of **acne** and skin disorders and compositions therefor

AB A composition is disclosed which when topically applied is effective in the treatment of **acne** and skin disorders. While the etiology of the treatment is complex, it is believed that the composition reduces the rate. . .

SUMM This invention relates to a composition for topical administration and to a method of treating **acne** and skin disorders.

SUMM **Acne** is a very common skin disease. It may be defined as a disorder characterized by seborrhea and obstruction of hair. . .

SUMM Much work has been done in an attempt to understand the mechanisms of **acnegenesis**. An interaction between hormones, keratinization, sebum and bacteria somehow determine the course and severity of the disease. Attention has been paid in particular to the factors controlling sebaceous gland secretion and to the bacteriology of **acne**.

SUMM **Acne** begins at puberty, when an increase in androgens causes an increase in the size and activity of the pilosebaceous glands. In statistical terms **acne** patients have larger sebaceous glands and secrete more sebum than patients without **acne** probably because they have an enhanced response to circulating androgens. However, this does not necessarily apply to the individual since some greasy-skinned patients have no **acne**.

SUMM . . . the pilosebaceous duct, bacterial enzymes break down the triglycerides into free acid. The bacteria responsible for this are primarily Corynebacterium **acnes** and Staphylococcus aureus. Thus, the lipids which reach the skin contain not only triglycerides but free fatty acids. Some of. . .

SUMM Formation of an obstruction in the pilosebaceous duct is an essential step in the pathogenesis of **acne**. There are two types of obstructions, open comedones and closed comedones. A "blackhead" is an open comedo. With this type. . .

SUMM In view of the above, it appears that an effective treatment for **acne** would reduce the occurrence of obstructions in the pilosebaceous duct if, among other things, it reduced the rate at which. . . It is, therefore, an object of the present invention to provide a composition which is effective in the treatment of **acne** and skin disorders, particularly when applied with ultrasound, and which when applied with ultrasound reduces the sebum secretion rate, stimulates. . .

SUMM Many treatments for **acne** have been proposed in the past. Generally speaking, there have been topical methods of treatment, systemic and physical. None of. . .

SUMM Ultraviolet light has been used in the physical treatment of **acne** as have been X-rays. Surgery produces scars and does not aid in the resolution of the problem.

SUMM . . . that if it was applied with ultrasonic vibrations that it would stimulate the production of collagen in the treatment of **acne** scars. Nor was it known that a combination of zinc ions and ascorbic acid could give rise to a synergistic. . .

SUMM . . . synergistic combination effective as an antimicrobial agent against the microflora normally found in the pilosebaceous ducts, namely, effective against Corynebacterium **acnes** and Staphylococcus aureus. At that concentration, the composition will also be effective in the reduction of the sebum secretion rate. . .

SUMM The compositions of the present invention are effective in the treatment of **acne** when they are applied to the skin whether or not they are sonicated into the skin with ultrasound. With ultrasound,. . .

SUMM . . . treatment of scars, the ultrasound is preferably continuous and diffused over the area being treated, whereas in the treatment of **acne** it is preferably pulsed and finely focused to a point on the area undergoing treatment. The length of the treatment,. . .

DETD An **acne** cream according to the present invention was prepared from the following ingredients:

DETD One hundred and eighty-six patients were treated for **acne**. The patients were classified clinically according to the grade of **acne**, i.e., mild, moderate or severe:

DETD

Patients Treated for **Acne**

Sex	Average Age	Mild **Acne**	Moderate **Acne**	Severe **Acne**
92 Males	20.2	20	30	43
94 Females	21.6	17	38	39

DETD Patients with mild or moderate **acne** responded well to treatment with the **acne** cream described in Example 1, which involved application of the cream overnight, daily for 7 days, then every other day. In those patients with mild cases, nearly 100% of the **acne** lesions disappeared within 2 weeks; in those patients with moderate cases, 80% of the **acne** lesions disappeared within 8-10 weeks. It was noted that **acne** began to appear again 3 months after stopping the **acne** treatment but was controlled by continuous application every 3 days.

DETD . . . the indication was 50% improvement. However, when the cream was applied with ultrasound 3 times a week, 80% of the **acne** lesions disappeared after 6 weeks. In cases where the **acne** area is scarred, it is preferred if the cream be applied with a 10 sq. cm. applicator vibrating continuously at. . .

DETD . . . was noted in come patients that their skin became dry and itching due to the action of zinc in the **acne** cream. To treat

the dry, itching skin, a salve composed of 10% urea, 1000 IU vitamin A and 500 IU. . .

DETD An **acne** cream according to the present invention was prepared by blending the following components:

DETD It is known that **acne** in humans results from an increased rate of sebum secretion (Lancet 1:689, 1969; J. Investig. Dermatol. 43:387, 167) and it. . . rats (Proc. Royal Soc. Med. 62:49, 1969). The experiment in this example was conducted to show the effect of the **acne** cream prepared in Example 3 on the sebum secretion rate of male rats that had been treated with testosterone.

DETD The rats in Group III were treated with 2.0 g of the **acne** cream described in Example 3 once a day for 15 days and the rats in Group IV were treated with **acne** cream like those in Group III and with ultrasound like those in Group II.

DETD The above results indicate that the **acne** cream of the present invention particularly when applied with ultrasonic vibrations, decreases the sebum secretion rate of testosterone-treated rats.

DETD In this example, **acne** was induced in the external ear canal of rabbits and then was treated with the **acne** cream described in Example 3. More particularly, 5.0 mg testosterone propionate was injected subcutaneously into the ear canal of 15. . .

DETD Before treatment with the **acne** cream, whole glycerin mounts were prepared by Hambrick's technique (J. Investig. Dermatol. 28:89, 1957) from tissue excised from the ears. . .

DETD The rabbits in Group II were treated with 2.0 g of the **acne** cream described in Example 3 once a day and the rabbits in Group II followed by an ultrasound treatment every. . .

DETD In this example, zinc sulfate and ascorbic acid were each checked for its effectiveness on the growth of Corynebacterium **acnes** in vitro. This bacterium, as mentioned above, is present in the pilosebaceous ducts and is implicated in **acnegenesis**. A synergistic combination of zinc sulfate and ascorbic acid was then prepared and its effectiveness checked. The results were reported. . .

DETD

Growth of Corynebacterium **acnes** in vitro

Trial	1	2	3	4	5	6	7	8	9	10
1% ZnSO.sub.4.7H.sub.2 O	M*	M	M	M	S*	M.	.	.		

CLM What is claimed is:

1. A method for treating **acne** comprising topically administering with ultrasonic vibrations at a frequency between 1000 KHZ and 3000 KHZ and at a power level between 0.5 and 3.0 watts per sq. cm. to **acne** affected skin an effective amount of a composition comprising from about 1.0 to about 4.0 percent by weight of zinc sulfate and from about 2.0 to about 6.0 percent by weight of **ascorbic** acid in a pharmaceutical carrier which is an effective coupling agent for ultrasonic vibrations and which does not inactivate the pharmacological activity of the **zinc salt** or **ascorbic** acid whereby said composition effectively retards the rate of sebum secretion in the treated area and stimulates the production of. . .

2. The method of claim 1 wherein the ultrasonic vibrations are pulsed and finely focused on the **acne** affected skin being treated.

3. The method of claim 1 wherein the ultrasonic vibrations are continuous and diffusely focused on the **acne** affected skin being treated.

AB A composition is disclosed which when topically applied is effective in the treatment of **acne** and skin disorders. While the etiology of the treatment is complex, it is believed that the composition reduces the rate of sebum secretion, inhibits the formation of keratin and fatty

acids in the pilosebaceous ducts and is antimicrobial to the bacteria normally found in said ducts. The treatment is accomplished quicker and stimulates the production of collagen in the healing of scars if the composition is sonicated into the affected area with ultrasonic vibrations.

ACCESSION NUMBER:	83:6223 USPATFULL		
TITLE:	Treatment of **acne** and skin disorders and compositions therefor		
INVENTOR(S):	Fahim, Mostafa S., 500 Hulen Dr., Columbia, MO, United States 65201		
	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4372296		19830208
APPLICATION INFO.:	US 1980-210370		19801126 (6)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Howell, Kyle L.		
ASSISTANT EXAMINER:	Swisher, Nancy A. B.		
LEGAL REPRESENTATIVE:	Fishel, Grace J.		
NUMBER OF CLAIMS:	3		
EXEMPLARY CLAIM:	1		
LINE COUNT:	425		

=>

L4 ANSWER 25 OF 34 USPATFULL
PI US 5643584 19970701
TI Aqueous gel retinoid dosage form
SUMM . . . of cells, whether they are of ectodermal, endodermal or mesodermal origin. Retinoids have found clinical utility in the treatment of **acne** vulgaris, severe cystic **acne**, psoriasis, and other disorders of keratinization. Possible uses of retinoids are being explored in the prophylaxis and treatment of cancer.. . .

SUMM It is known to use certain retinoids, particularly tretinoin, topically for treatment of **acne** as set forth in U.S. Pat. No. 3,729,568. Other known topical uses of tretinoin include, in addition to ache treatment,. . .

SUMM . . . to the skin of a patient because it provides optimal effective amounts of retinoid to the skin for treatment of **acne** and/or treatment of sundamaged skin and other therapeutic applications. Using tretinoin as a standard for retinoids, tretinoin will typically be. . .

SUMM . . . components may be used in combination with the retinoid dosage form composition of the invention. For example, antibiotics used in **acne** preparations such as: the antibacterials erythromycin, clindamycin, tetracycline, minocycline, of loxacin and sodium sulfacetamide; antifungals such as miconazole, terconazole, ketoconazole,. . .

CLM What is claimed is:

1. A **tretinoin** aqueous gel dispersion composition for therapeutic topical administration of **tretinoin** to the skin comprising: a therapeutically effective amount of unsolubilized micronized **tretinoin** particles; a surfactant selected from the group consisting of octoxynol and nonoxynol in an amount effective to enhance penetration of **tretinoin** into the skin; a preservative; a gelling agent in an amount sufficient to provide body to the aqueous gel dosage form skin and which maintains the dispersion of **tretinoin** in the composition by maintenance of a semisolid dosage form; and water qs to 100%.

2. A **tretinoin** aqueous gel dispersion composition for topical administration of **tretinoin** to the skin comprising in weight by total weight of the composition: 0.001 to 0.5% micronized **tretinoin** particles; 0.001 to 1.0% surfactant selected from the group consisting of octoxynol and nonoxynol; 0.005 to 2.0% preservative; 0.01% to. . .

5. An aqueous gel composition according to claim 1 wherein the micronized **tretinoin** comprises at least 90% of the particles in the size range of 1 to 30 microns.

6. An aqueous gel composition according to claim 1 wherein the micronized **tretinoin** particles have a mean size in the range of 1 to 10 microns.

. . . composition according to claim 1 wherein polyvinylpyrrolidone is added in an amount effective to inhibit crystal growth of the micronized **tretinoin**.

8. An aqueous gel composition according to claim 2 wherein the micronized **tretinoin** is present in the range of 0.005 to 0.2%.

. . . according to claim 2 wherein the antioxidant is selected from the group consisting of: alpha-tocopherol, butylated hydroxytoluene, butylated hydroxyanisole and **ascorbic** acid.

16. A method of increasing the therapeutic effectiveness of **tretinoin** for topical application to the skin comprising the step of delivering micronized **tretinoin** dispersed in an aqueous gel vehicle containing a surfactant selected from the group consisting of octoxynol and nonoxynol to the. . .

17. A method of increasing the therapeutic effectiveness of **tretinoin** for topical skin application comprising the step of delivering micronized **tretinoin** to the intended site of application using an aqueous gel dispersion composition in accordance with claim 1.

19. A method of improving the skin penetration of a topically administered **tretinoin** to the skin of a patient comprising the steps of: dispersing micronized **tretinoin** in an aqueous gel composition in accordance with claim 1; and applying the **tretinoin** aqueous gel to the skin of a patient.

20. A method of reducing irritation associated with the topical administration of **tretinoin** to a patient comprising the steps of: dispersing micronized **tretinoin** in an aqueous gel composition in accordance with claim 1; and applying the micronized **tretinoin** aqueous gel to the skin of a patient.

29. A **tretinoin** aqueous gel dispersion composition for therapeutic topical administration of **tretinoin** to the skin consisting essentially of in weight by total weight of the composition: 0.001 to 0.5% micronized unsolubilized **tretinoin** particles; 0.001 to 1.0% surfactant selected from the group consisting of octoxynol and nonoxynol; 0.005 to 2.0% preservative; 0.01% to. . .

31. A method for reducing irritation associated with the topical administration of **tretinoin** to the skin of a patient comprising: (a) dispersing in a composition for topical administration in weight by total weight of the composition: 0.001 to 0.5% micronized unsolubilized **tretinoin** particles; 0.001 to 1.0% surfactant selected from the group consisting of octoxynol and nonoxynol; 0.005 to 2.0% preservative; 0.01% to. . .

L12 ANSWER 5 OF 46 USPATFULL
PI US 6124348 20000926
SUMM Still another example of compositions which include **ascorbic acid** is described in U.S. Pat. No. 4,938,969 to Schinitsky et al. Schinitisky et al. discloses a composition for reducing wrinkles by applying a topical formulation containing **ascorbic acid**, tyrosine and a non-toxic **zinc salt**. These formulations are incorporated into a tissue compatible vehicle such as hydrophilic lotion, ointment, cream, or gel-based vehicles. Examples of. . .
SUMM As described in the representative art, formulations containing **ascorbic acid** for use in various skin applications are shown. However, in the compositions described in Yu et al. and Perricone patents the **ascorbic acid** component is "dissolved" in an aqueous vehicle and in the Schinitsky patent the **ascorbic acid** is combined with tyrosine and a non-toxic **zinc salt**.

L12 ANSWER 33 OF 46 USPATFULL
PI US 5508391 19960416
DETD When a crystalline 2-O-.alpha.-D-glucopyranosyl-L-**ascorbic** **acid** is in free acid form, it can be, if necessary, converted, for example, into sodium salt, calcium salt, magnesium salt, iron salt, copper salt and **zinc salt** by allowing it to react with an aqueous solution of such as metal hydroxide and metal carbonate,

L12 ANSWER 11 OF 46 USPATFULL
PI US 5140043 19920818
SUMM . . . (buffering an aqueous solution with an alkaline sodium salt). See also U.S. Pat. No. 4,367,157 which discloses stabilizing an aqueous **ascorbic acid** solution by adding monothioglycerol and maintaining the pH between 4 and 7; U.S. Pat. No. 2,400,171 which discloses stabilizing **ascorbic acid** by converting it to its calcium or **zinc salt** and preferably maintaining the pH at 7 to 7.3; U.S. Pat. No. 2,442,461 which discloses stabilizing calcium ascorbate by adding an aliphatic thiocarboxylic acid and maintaining the pH between 5.2 and 5.6; U.S. Pat. No. 2,585,580 which discloses stabilizing **ascorbic acid** with thio-sugars and maintaining the pH between 4.0 and 6.5; and U.S. Pat. No. 4,372,874 which discloses actually removing the. . .

L12 ANSWER 2 OF 46 USPATFULL
TI Treatment of acne and skin disorders and compositions therefor
PI US 4372296 19830208
IN Fahim, Mostafa S., 500 Hulen Dr., Columbia, MO, United States 65201

L12 ANSWER 3 OF 46 USPATFULL
TI Method for the treatment of aging or photo-damaged skin
PI US 4938969 19900703
IN Schinitsky, Michael R., Madison, WI, United States
Meisner, Lorraine F., Madison, WI, United States

L12 ANSWER 4 OF 46 USPATFULL
TI Process for producing ascorbic acid derivative
PI US 5516919 19960514
IN Sano, Atsunori, Kawagoe, Japan
Okamoto, Kuniaki, Kawagoe, Japan
Ebashi, Jun, Kawagoe, Japan

L12 ANSWER 5 OF 46 USPATFULL
TI Vitamin C skin formulations
PI US 6124348 20000926
IN Wells, Lawrence M., 93 Hoaglands La., Old Brookville, NY, United States 11545
Burmeister, Frederick H., Little Silver, NJ, United States

L12 ANSWER 6 OF 46 USPATFULL
TI Preparation and use of reactive and processable fluoropolymers
PI US 5698635 19971216
IN Kruger, Ralf, Koln, Germany, Federal Republic of
Harrison, David, Koln, Germany, Federal Republic of
Wrobel, Dieter, Leverkusen, Germany, Federal Republic of

L12 ANSWER 7 OF 46 USPATFULL
TI Oral compositions
PI US 4997640 19910305
IN Bird, Nigel P., Bebington, England
Ingram, Geoffrey S., Bebington, England
Riley, Paul I., Bebington, England
Ritchie, James A., Spital, England

L12 ANSWER 8 OF 46 USPATFULL
TI Topical vitamin C preparation
PI US 5945447 19990831
IN Fallick, Harry, King of Prussia, PA, United States

L12 ANSWER 9 OF 46 USPATFULL
TI Stable topical cosmetic/pharmaceutical emulsion compositions containing ascorbic acid
PI US 5902591 19990511
IN Herstein, Morris, Scarsdale, NY, United States

L12 ANSWER 10 OF 46 USPATFULL
TI Topical ascorbic acid compositions
PI US 5846996 19981208
IN Fallick, Harry, 677 W. DeKalb Pike, King of Prussia, PA, United States 19406

L12 ANSWER 11 OF 46 USPATFULL
TI Stable ascorbic acid compositions

PI US 5140043 19920818
IN Darr, Douglas, Timberlake, NC, United States
Pinnell, Sheldon R., Durham, NC, United States

L12 ANSWER 12 OF 46 USPATFULL
TI Method for producing organic agent coated with powders of coating agent
PI US 5008118 19910416
IN Iwanami, Koichi, Yokohama, Japan
Ito, Masatsugu, Tokyo, Japan

L12 ANSWER 13 OF 46 USPATFULL
TI Zinc salt of all-trans-retinoic acid for the treatment of acne
PI US 4214000 19800722
IN Papa, Christopher M., Colts Neck, NJ, United States

L12 ANSWER 14 OF 46 USPATFULL
TI Synergistic combinations of active substance for the cosmetic or dermatological care of the skin, hair & nails
PI US 5710177 19980120
WO 9414412 19940707
IN Sauermann, Gerhard, Wiemersdorf, Germany, Federal Republic of
Schonrock, Uwe, Norderstedt, Germany, Federal Republic of
Schreiner, Volker, Hamburg, Germany, Federal Republic of
Stab, Franz, Echem, Germany, Federal Republic of

L12 ANSWER 15 OF 46 USPATFULL
TI .alpha.-glycosyl-L-ascorbic acid, and it's preparation and uses
PI US 5767149 19980616
IN Yamamoto, Itaru, Okayama, Japan
Muto, Norio, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 16 OF 46 USPATFULL
TI .alpha.-glycosyl-L-ascorbic acid, and its preparation and uses
PI US 5616611 19970401
IN Yamamoto, Itaru, Okayama, Japan
Muto, Norio, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 17 OF 46 USPATFULL
TI .alpha.-Glycosyl-L-ascorbic acid, and its preparation and uses
PI US 5137723 19920811
IN Yamamoto, Itaru, Okayama, Japan
Muto, Norio, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 18 OF 46 USPATFULL
TI Stable topical ascorbic acid compositions
PI US 6146664 20001114
IN Siddiqui, Mukhtar, San Ramon, CA, United States

L12 ANSWER 19 OF 46 USPATFULL
TI Antioxidant composition for the treatment of psoriasis and related diseases
PI US 6011067 20000104
IN Hersh, Theodore, Atlanta, GA, United States

L12 ANSWER 20 OF 46 USPATFULL
TI Redox catalyst system for the initiation of emulsion polymerization
PI US 5969065 19991019
IN Jakob, Martin, Kelkheim, Germany, Federal Republic of

L12 ANSWER 21 OF 46 USPATFULL
TI Topical administration of catecholamines and related compounds to subcutaneous muscle tissue using percutaneous penetration enhancers
PI US 5879690 19990309

IN Perricone, Nicholas V., 35 Pleasant St. Suite 2A, Meriden, CT, United States 06450

L12 ANSWER 22 OF 46 USPATFULL
TI Therapeutic dental floss for treating systemic diseases
PI US 5875799 19990302
IN Petrus, Edward J., Austin, TX, United States

L12 ANSWER 23 OF 46 USPATFULL
TI Therapeutic toothpick for treating oral and systemic diseases
PI US 5875798 19990302
IN Petrus, Edward J., Austin, TX, United States

L12 ANSWER 24 OF 46 USPATFULL
TI Pharmaceutical composition containing 2-O-.alpha.-d-glucopyranosyl-l-ascorbic acid
PI US 5843907 19981201
IN Sakai, Shuzo, Okayama, Japan
Yoneyama, Masaru, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 25 OF 46 USPATFULL
TI Smoking products containing antioxidants
PI US 5829449 19981103
IN Hersh, Theodore, Atlanta, GA, United States
Hersh, Rebecca, Atlanta, GA, United States

L12 ANSWER 26 OF 46 USPATFULL
TI Redox catalyst system for the initiation of emulsion polymerization
PI US 5744418 19980428
IN Jakob, Martin, Kelkheim, Germany, Federal Republic of

L12 ANSWER 27 OF 46 USPATFULL
TI Derivatized DTPA complexes, pharmaceutical agents containing these compounds, their use and process for their production
PI US 5733522 19980331
WO 9417029 19940804
IN Schmitt-Willich, Heribert, Berlin, Germany, Federal Republic of
Platzek, Johannes, Berlin, Germany, Federal Republic of
Gries, Heinz, Berlin, Germany, Federal Republic of
Raduchel, Bernd, Berlin, Germany, Federal Republic of
Petrov, Orlin, Berlin, Germany, Federal Republic of
Muhler, Andreas, Berlin, Germany, Federal Republic of
Frenzel, Thomas, Berlin, Germany, Federal Republic of
Vogler, Hubert, Berlin, Germany, Federal Republic of
Bauer, Hans, Berlin, Germany, Federal Republic of
Nickisch, Klaus, Berlin, Germany, Federal Republic of
Hilscher, Jean-Claude, Berlin, Germany, Federal Republic of

L12 ANSWER 28 OF 46 USPATFULL
TI Skin-adhesive cosmetics for removing wrinkles, containing vitamins and aloe extract
PI US 5723138 19980303
IN Bae, Jae-Hyun, 47-3, Onchun-1 Dong, Tongrae-ku, Pusan, Korea, Republic of
Kim, Ok-Yeon, 47-3, Onchun-1 Dong, Tongrae-ku, Pusan, Korea, Republic of

L12 ANSWER 29 OF 46 USPATFULL
TI Dimeric DTPA derivatives, their metal complexes and pharmaceutical agents containing these complexes
PI US 5695737 19971209
IN Krause, Werner, Berlin, Germany, Federal Republic of
Maier, Franz Karl, Berlin, Germany, Federal Republic of
Bauer, Michael, Berlin, Germany, Federal Republic of
Schuhmann-Giampieri, Gabriele, Berlin, Germany, Federal Republic of

Press, Wolf, Berlin, Germany, Federal Republic of
Platzek, Johannes, Berlin, Germany, Federal Republic of
Schmitt-Willich, Heribert, Berlin, Germany, Federal Republic of

L12 ANSWER 30 OF 46 USPATFULL
TI Topical compositions and methods for treatment of skin damage and aging using catecholamines and related compounds
PI US 5643586 19970701
IN Perricone, Nicholas V., 27 Coginchaug Ct., Guilford, CT, United States 06437

L12 ANSWER 31 OF 46 USPATFULL
TI Process for producing molybdenum oxysulfide dithiocarbamate
PI US 5631213 19970520
IN Tanaka, Noriyoshi, Tokyo, Japan
Fukushima, Aritoshi, Tokyo, Japan
Tatsumi, Yukio, Tokyo, Japan
Morita, Kazuhisa, Tokyo, Japan
Saito, Yoko, Tokyo, Japan

L12 ANSWER 32 OF 46 USPATFULL
TI Separation system for preparing high .alpha.-glycosyl-L-ascorbic acid
PI US 5630923 19970520
IN Aga, Hajime, Okayama, Japan
Yoneyama, Masaru, Okayama, Japan
Sakai, Shuzo, Okayama, Japan

L12 ANSWER 33 OF 46 USPATFULL
TI Crystalline 2-O-.alpha.-D-glucopyranosyl-L-ascorbic acid, and its preparation and uses
PI US 5508391 19960416
IN Sakai, Shuzo, Okayama, Japan
Yoneyama, Masaru, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 34 OF 46 USPATFULL
TI Crystalline 2-O-.alpha.-d-glucopyranosyl-L-ascorbic acid, and its preparation and uses
PI US 5432161 19950711
IN Sakai, Shuzo, Okayama, Japan
Yoneyama, Masaru, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 35 OF 46 USPATFULL
TI Crystalline 2-O-.alpha.-D-glucopyranosyl-L-ascorbic acid, and its preparation and uses
PI US 5407812 19950418
IN Sakai, Shuzo, Okayama, Japan
Yoneyama, Masaru, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 36 OF 46 USPATFULL
TI Process for preparing high .alpha.-glycosyl-L-ascorbic acid, and separation system for the process
PI US 5338420 19940816
IN Aga, Hajime, Okayama, Japan
Yoneyama, Masaru, Okayama, Japan
Sakai, Shuzo, Okayama, Japan

L12 ANSWER 37 OF 46 USPATFULL
TI Monosaccharide containing wound healing preparation
PI US 5177065 19930105
IN Silvetti, Sr., Anthony N., 930 Ashland Ave., River Forest, IL, United States 60305
Silvetti, Jr., Anthony N., 930 Ashland Ave., River Forest, IL, United States 60305

L12 ANSWER 38 OF 46 USPATFULL
TI Crystalline 2-O-.alpha.-D-glucopyranosyl-L-ascorbic acid, and its preparation and uses
PI US 5084563 19920128
IN Sakai, Shuzo, Okayama, Japan
Yoneyama, Masaru, Okayama, Japan
Miyake, Toshio, Okayama, Japan

L12 ANSWER 39 OF 46 USPATFULL
TI Fructose containing wound healing preparation
PI US 4889844 19891226
IN Silvetti, Sr., Anthony N., 930 Ashland Ave., River Forest, IL, United States 60305
Silvetti, Jr., Anthony N., 930 Ashland Ave., River Forest, IL, United States 60305

L12 ANSWER 40 OF 46 USPATFULL
TI Method for treating or preventing bovine mastitis
PI US 4782048 19881101
IN Upton, Peter, Corona Del Mar, CA, United States

L12 ANSWER 41 OF 46 USPATFULL
TI Composition and process for promoting epithelial regeneration
PI US 4711780 19871208
IN Fahim, Mostafa S., 500 Hulen Dr., Columbia, MO, United States 65201

L12 ANSWER 42 OF 46 USPATFULL
TI Method of treating atrophic vulvar dystrophy
PI US 4150128 19790417
IN Jasionowski, Edward A., 5 Tannehill La., Parlin, NJ, United States 08859

L12 ANSWER 43 OF 46 USPATFULL
TI Process for facilitating wound healing with N-acetylated partially depolymerized chitin materials
PI US 3914413 19751021
IN Balassa, Leslie L., Tomahawk Lake, Blooming Grove, NY, United States 10914

L12 ANSWER 44 OF 46 USPATFULL
TI Process for promoting wound healing with chitin derivatives
PI US 3911116 19751007
IN Balassa, Leslie L., Tomahawk Lake, Blooming Grove, NY, United States 10914

L12 ANSWER 45 OF 46 USPATFULL
TI Chitin and chitin derivatives for promoting wound healing
PI US 3903268 19750902
IN Balassa, Leslie L., Blooming Grove, NY, United States

L12 ANSWER 46 OF 46 USPATFULL
TI COMPOSITIONS CONTAINING CALCIUM AND MAGNESIUM SALTS OF CITRIC, PHOSPHORIC AND LACTIC ACID AND METHOD OF PROMOTING HEALING OF WOUNDS THEREWITH
PI US 3624201 19711130
IN Balassa, Leslie L., Blooming Grove, NY, United States

L12 ANSWER 2 OF 46 USPATFULL

SUMM In general, the new compositions of the present invention contain a pharmaceutically acceptable, water soluble **zinc salt** and **ascorbic acid**. To be useful herein for the purposes of reducing the rate at which sebum is secreted and for reducing the number of bacteria in the pilosebaceous ducts, the **zinc salt** and the **ascorbic acid** are preferably present in an amount sufficient to provide a synergistic combination which has a greater than additive antimicrobial effect. . .

SUMM The topical compositions of the present invention comprise a mixture of a pharmaceutically acceptable **zinc salt** and **ascorbic acid**. Suitable **zinc salts** include those zinc compounds which are soluble in water at body temperature and which are pharmaceutically acceptable. As such, they must have low human or animal toxicity when applied in the manner intended. Among the useful **zinc salts** are zinc sulfate monohydrate, zinc sulfate heptahydrate and the like. If the combination is to be stored, to prevent the oxidation of **ascorbic acid**, it is preferred that an antioxidant such as vitamin E be added. It is also preferred that vitamin A be. . .

SUMM In accordance with the present invention, the **zinc salt** and the **ascorbic acid** are preferably present in that amount sufficient to provide a synergistic combination effective as an antimicrobial agent against the microflora. . .

SUMM The **zinc salt** and **ascorbic acid** along with the vitamin E and vitamin A, if any, are mixed in a pharmaceutical carrier such as water, alcohol,. . . thereof. It is important that the carrier be selected so that it does not inhibit the pharmacological activity of the **zinc salt** or the **ascorbic acid**. When the composition is sonicated into the affected area with ultrasonic vibrations, the carrier is preferably a coupling agent since. . .

SUMM When the **zinc salt** is zinc sulfate, an effective composition is prepared wherein the concentration of said salt is at least 0.5 percent by weight and wherein the **ascorbic acid** is present in a similar amount. The exact amounts can be adjusted depending on the effectiveness of the active ingredients such that an effective synergistic combination is obtained. Preferably, the **zinc salt** should be present in amount from 1 to 4 percent by weight while the **ascorbic acid** should be present in an amount from about 2 to 6 percent by weight. Higher concentrations are not preferred because. . .

SUMM The compositions of the present invention are made up by combining the **zinc salt** and **ascorbic acid** along with vitamin E and vitamin A, if present, with a pharmaceutical carrier in the amounts described above and by. . .

CLM What is claimed is:

. . . to about 4.0 percent by weight of zinc sulfate and from about 2.0 to about 6.0 percent by weight of **ascorbic acid** in a pharmaceutical carrier which is an effective coupling agent for ultrasonic vibrations and which does not inactivate the pharmacological activity of the **zinc salt** or **ascorbic acid** whereby said composition effectively retards the rate of sebum secretion in the treated area and stimulates the production of collagen.

(102)

4214000 7/22/1980.

L3 ANSWER 2 OF 2 USPATFULL

TI Zinc salt of all-trans-retinoic acid for the treatment of acne

IN Papa, Christopher M., Colts Neck, NJ, United States

AB A zinc salt of retinoic acid has been prepared and found to have significant anti-acne activity, similar to that of retinoic acid, but with less of a tendency to cause flaking or irritation at anti-acne effective concentrations.

CLM What is claimed is:

1. A **zinc salt** of all-trans-retinoic acid having the theoretical structural formula: ##STR2## and a zinc content of about 7.1 to 8.5 weight percent.

2. A **topical** composition for the treatment of acne comprising a therapeutically effective concentration of a **zinc salt** of all-trans-retinoic acid in a pharmaceutically acceptable **topical** vehicle compatible therewith, said **zinc salt** having the theoretical structural formula: ##STR3## and a zinc content of about 7.1 to 8.5 weight percent.

3. The composition of claim 2 wherein said concentration is from about 0.001% to about 0.5% by weight.

4. The composition of claim 3 wherein said concentration is from about 0.005% to about 0.05% by weight.

5. The composition of claim 3 wherein said concentration is from about 0.01% to about 0.025% by weight.

6. The composition of claim 2 wherein said **topical** vehicle is an alcoholic gel.

7. The composition of claim 2 wherein said **topical** vehicle is a liquid.

8. The composition of claim 2 wherein said **topical** vehicle is a cream.

9. The composition of claim 6 wherein said vehicle consists essentially of an organic solvent selected from the group consisting of ethanol, isopropanol, propylene glycol and mixtures thereof; an effective amount of a pharmaceutically acceptable antioxidant soluble in said organic solvent; and an effective amount of a pharmaceutically acceptable gelling agent solvated in said organic solvent.

10. The composition of claim 9 wherein the gelling agent is selected from the group consisting of hydroxyethylcellulose, hydroxypropyl cellulose, and an acidic carboxy vinyl polymer of high molecular weight.

11. The composition of claim 9 wherein the antioxidant is selected from the group consisting of butylated hydroxyanisole, butylated hydroxytoluene, .alpha.-tocopherol, **ascorbic acid**, and propyl gallate.

12. The composition of claim 10 wherein said carboxy vinyl polymer is neutralized with a pharmaceutically acceptable alkaline material.

13. The composition of claim 9 which contains from about 0.01 to about

0.1% by weight of said antioxidant and from about 0.5 to about 5.0% by weight of said gelling agent.

14. The composition of claim 9 wherein said organic solvent comprises from about 84 to about 99% by weight of said composition.

15. The composition of claim 12 wherein said alkaline material is selected from the group consisting of potassium hydroxide, .beta.-alanine and diisopropanol amine.

16. The composition of claim 9 wherein said organic solvent comprises a mixture selected from the group consisting of ethanol and propylene glycol; isopropanol and propylene glycol; and ethanol and isopropanol.

17. The composition of claim 7 wherein said vehicle comprises a water-miscible organic liquid selected from the group consisting of ethanol, isopropanol, propylene glycol, the liquid polyethylene glycols, the liquid polypropylene glycols, and mixtures thereof.

18. The composition of claim 17 wherein said organic liquid comprises a mixture of ethanol and propylene glycol.

19. The composition of claim 8 wherein said vehicle comprises from about 1.0 to about 10.0% by weight of an emulsifier, from about 15.0 to about 50.0% by weight of a hydrophobic material selected from the group consisting of petrolatum, beeswax, sperm wax, lanolin, mineral oil, liquid and solid fatty acids having from about 12 to about 20 carbon atoms, fatty alcohols having from about 12 to about 20 carbon atoms, and fatty acid esters wherein the fatty acid moiety has from about 12 to about 20 carbon atoms, from about 0.05 to about 1.0% by weight of a preservative, from about 0.01 to about 1.0% by weight of an antioxidant, and water.

20. The composition of claim 19 which further comprises from about 0.1 to about 1.0% by weight of xanthan gum.

21. The composition of claim 19 wherein the emulsifier is selected from the group consisting of polyoxyethylene 25 oxypropylene stearate, polyoxyl 40 stearate, polyethylene glycol 400 monostearate, polyethylene glycol 600 monostearate, polyoxyethylene 20 stearyl ether and polyoxyethylene 2 stearyl ether.

22. The composition of claim 19 wherein the preservative is sorbic acid.

23. The composition of claim 19 wherein the antioxidant is a member selected from the group consisting of butylated hydroxytoluene, and .alpha.-tocopherol.

24. The composition of claim 19 wherein the hydrophobic material is selected from the group consisting of a stearyl alcohol, petrolatum, stearic acid, isopropyl myristate, cetyl alcohol, beeswax, sperm wax, lanolin, mineral oil and glyceryl monostearate.

25. The composition of claim 9 further comprising an additive selected from the group consisting of dyes, perfume oils, sunscreens, antimicrobials and **topical** corticosteroids.

26. The composition of claim 17 further comprising an additive selected from the group consisting of dyes, perfume oils, sunscreens, antimicrobials and **topical** corticosteroids.

27. The composition of claim 19 further comprising an additive selected from the group consisting of dyes, perfume oils, sunscreens, antimicrobials and **topical** corticosteroids.

28. A method of treating acne which comprises periodically applying to the affected site the composition of claim 2.

29. The method of claim 28 which comprises applying said composition at regular intervals of from about 7 to about 21 times weekly.

L3 ANSWER 1 OF 2 USPATFULL
TI Oral composition for improving oral health
IN Fahim, Mostafa S., 500 Hulen Dr., Columbia, MO, United States 65201
Miller, Ercell L., 3424 Woodrail Ter., Columbia, MO, United States 65201
AB A therapeutic composition is disclosed for use in improving the physiological tone of the oral tissues, which among other beneficial effects nourishes said tissues and causes them to approach normal condition. The therapeutic composition also has an antimicrobial effect on the oral microflora including those difficult to eliminate pathogenic genera known to be implicated in dental caries and periodontal disease. The therapeutic composition comprises a pharmaceutically acceptable, water soluble zinc salt and ascorbic acid or an active analog thereof. The zinc salt and the ascorbic acid are present in an amount sufficient to provide a synergistic combination which has a greater than additive antimicrobial effect on such oral genera as Actinomyces, Streptococcus, Staphylococcus, Candida, Pseudomonas and Escherichia.
CLM What is claimed is:
1. A therapeutic composition for **topical** oral administration for stimulating production of collagen consisting essentially of about 0.5 to about 2.0 percent by weight/volume of a pharmaceutically acceptable, water soluble **zinc salt** and about 0.5 to about 2.0 percent by weight/volume of **ascorbic acid** or sodium ascorbate.

2. The composition according to claim 1 wherein the ratio of the **zinc salt** to the **ascorbic acid** or sodium ascorbate is substantially 1 to 1 by weight.

3. The composition according ing to claim 2 wherein the **zinc salt** is ZnSO.sub.4.7H.sub.2 O.

4. The composition according to claim 3 wherein the pH is from about 4 to about 5.

5. A method for treating oral tissues by stimulating the production of collagen comprising topically administering thereto a therapeutically effective amount of a composition consisting essentially of about 0.5 to about 2.0 percent by weight/volume of a pharmaceutically acceptable, water soluble **zinc salt** and about 0.5 to about 2.0 percent by weight/volume of **ascorbic acid** or sodium ascorbate.

6. The method according to claim 5 wherein the composition has a pH from about 4 to about 5 and includes ZnSO.sub.4.7H.sub.2 O and sodium ascorbate.

7. The method according to claim 6 wherein the ratio of the ZnSO.sub.4.7H.sub.2 O to the sodium ascorbate is substantially 1 to 1 by weight.

8. A method for treating pregnancy gingivitis comprising topically administering to oral tissues a therapeutically effective amount of a composition consisting essentially of about 0.5 to about 2.0 percent by weight/volume of a pharmaceutically acceptable, water soluble

zinc salt and about 0.5 to about 2.0 percent by weight/volume of **ascorbic acid** or sodium ascorbate.

9. A method for treating oral canker sores comprising topically administering to oral tissues a therapeutically effective amount of a composition consisting essentially of about 0.5 to about 2.0 percent by weight/volume of a pharmaceutically acceptable, water soluble **zinc salt** and about 0.5 to about 2.0 percent by weight/volume of **ascorbic acid** or sodium ascorbate.

10. A method for treating idopathic hypogeusia comprising topically administering to oral tissues a therapeutically effective amount of a composition consisting essentially of about 0.5 to about 2.0 percent by weight/volume of a pharmaceutically acceptable, water soluble **zinc salt** and about 0.5 to about 2.0 percent by weight/volume of **ascorbic acid** or sodium ascorbate.

L7 ANSWER 5 OF 5 USPATFULL
PI US 3763009 19731002
CLM What is claimed is:

1. A process for the production of ascorbic **glucoside** or **ascorbic acid** oligosaccharides, comprising adding a saccharide to an aqueous solution of L-ascorbic acid or its salt, subjecting the mixture to the action of fungal transglucosidase derived from microorganisms of genera Aspergillus or Penicillium or botanical transglucosidase derived from cabbage, thus forming **ascorbic acid glucoside** or **ascorbic acid** oligosaccharides, and then purifying and concentrating the resultant to obtain the ascorbic acid

2. A process according to claim 1, wherein, in said subjecting step, the mixture is subjected to the action of an enzyme producing strain selected from the group consisting of Aspergillus awamori IAM 2299, Aspergillus usamii IAM 2185, Aspergillus saitoi IAM 2196, Aspergillus Kawachii IAM 2062, Aspergillus meleus IFO 4420, Penicillium chrysogenum IAM 7326, and

3. A process according to claim 1, wherein the saccharide to be added is

4. A process according to claim 1, wherein the enzymatic reaction is

5. **Ascorbic acid glucoside** and/or **ascorbic acid** oligosaccharide derivatives produced by

L7 ANSWER 3 OF 5 USPATFULL
PI US 5730972 19980324
CLM What is claimed is:

1. A composition comprising at least one water-soluble sulphonic UVA screening agent and at least one saccharide ester of ascorbic acid which is compatible with said screening agent, in a cosmetically and/or dermatologically acceptable medium.

2. A composition comprising at least one water-soluble sulphonic UVA screening agent and at least one saccharide ester of ascorbic acid which is compatible with said screening agent, in a cosmetically and/or dermatologically acceptable medium, wherein the screening agent is selected from the group consisting of sulphone-containing or sulphonate-containing benzylidenecamphor derivatives.

3. The composition according to claim 2, wherein the screening agent has the following formula (I): ##STR9## in which: Z denotes a group ##STR10## in which Y represents --H or --SO.sub.3 H, optionally neutralized, n is equal to 0 or is a number ranging from 1 to 4, R.sub.1 represents one or more linear or branched alkyl or alkoxy radicals, which may be identical or different, containing from 1 to 4 carbon atoms.

4. The composition according to claim 3, wherein the screening agent is benzene-1,4-[di(3-methylidene-10-camphorsulphonic)]acid.

5. The composition according to claim 1, wherein the saccharide ester of **ascorbic acid** is ascorbyl-2-**glucoside**.

6. The composition according to claim 2, wherein the saccharide ester of **ascorbic acid** is ascorbyl-2-**glucoside**.

7. The composition according to claim 3, wherein the saccharide ester of **ascorbic acid** is ascorbyl-2-**glucoside**.

8. The composition according to claim 4, wherein the saccharide ester of **ascorbic acid** is ascorbyl-2-**glucoside**.

9. The composition according to claim 1, in the form of an oil-in-water emulsion or in the form of a dispersion of lipid spherules.

L7 ANSWER 2 OF 5 USPATFULL
PI US 5869525 19990209
CLM What is claimed is:
1. An L-ascorbic acid drug for intracerebral administration comprising a therapeutically effective amount for intracerebral administration of one or more stable activity L-ascorbic acid compounds and one or more blood brainbarrier deobstruents selected from the group consisting of saccharides and saccharide derivatives.

2. The drug for intracerebral administration as claimed in claim 1, wherein said stable activity L-ascorbic acid is selected from the group consisting of L-ascorbic acid-2-monophosphoric ester, and salts thereof, and an L-**ascorbic acid**-2-**glucoside**.

3. The drug for intracerebral administration as claimed in claim 1, wherein said stable activity L-ascorbic acid is selected from the group consisting of L-ascorbic acid-2-monophosphoric ester, and the sodium salt, potassium salt and magnesium salt thereof, and L-**ascorbic acid** 2-**glucoside**.

4. The drug for intracerebral administration as claimed in claim 1, c

20. The method of claim 17, comprising administering by intravenous injection an L-ascorbic acid drug comprising one or more stable activity L-ascorbic acid compounds selected from the group consisting of L-ascorbic acid-2-monophosphoric ester and salts thereof and an L-**ascorbic acid**-2-**glucoside** in a dose of from 1 to 500 .mu.mol per kg of body weight.

23. The method of claim 21, comprising administering by intravenous injection an L-ascorbic acid drug comprising one or more stable activity L-ascorbic acid compounds in a dose of from 0.01 to 1.00 .mu.mol per kg of body weight and one or more blood brainbarrier deobstruents selected from the group consisting of saccharides and saccharide derivatives in a dose of from 10 to 1,000 .mu.mol per kg of body weight.

24. The method of claim 21, comprising administering by intravenous injection an L-ascorbic acid drug comprising one or more stable activity L-ascorbic acid compounds selected from the group consisting of L-ascorbic acid-2-monophosphoric ester and salts thereof and an L-**ascorbic acid**-2-**glucoside** in a dose of from 0.01 to 1.00 .mu.mol per kg of body weight and one or more blood b

L7 ANSWER 1 OF 5 USPATFULL
PI US 5882658 19990316
CLM What is claimed is:

1. A composition comprising an aqueous solution of at least one saccharide ester of rutin and at least one saccharide ester of ascorbic acid, having a pH of from 4 to 6.

2. The composition of claim 1, wherein the saccharide ester of rutin is alpha-glycosyl rutin.

3. The composition of claim 1, wherein the saccharide ester of **ascorbic acid** is ascorbyl-2-**glucoside**.

4. The composition of claim 1, which further comprises an oil phase such that said composition is an oil-in-water emulsion.

5. The composition of claim 1, which further comprises lipid spherules.

6. The composition of claim 1, wherein the saccharide ester of ascorbic acid is from 0.01 to 20% by weight, relative to the total weight of the composition.

7. The composition of claim 1, wherein the saccharide ester of rutin is from 0.001 to 5% by weight, relative to the total weight of the composition.

8. The composition of claim 1, which further comprises hydrophilic or lipophilic adjuvants.

9. The composition of claim 1, which further comprises a cosmetically or dermatologically acceptable medium.

10. A method of treating the signs of ageing of the skin, which comprises: applying to the skin a composition comprising an aqueous solution of at least one saccharide ester of rutin and at least one saccharide ester of ascorbic acid, wherein the pH of the solution is from 4 to 6, said signs of ageing being wrinkles and fine lines in the skin.

11. A method of depigmenting the skin, which comprises applying to skin a composition comprising an aqueous solution of at least one saccharide ester of rutin and at least one saccharide ester of ascorbic acid, wherein the pH of the solution is from 4 to 6.

12. A method of protecting the skin against free radicals, which comprises applying to skin a composition comprising an aqueous solution of at least one saccharide ester of rutin and at least one saccharide ester of ascorbic acid, wherein the pH of the solution is from 4 to 6.

13. The composition of claim 1, which further comprises at least one anti-oxidant selected from the group consisting of iron-chelating agents, anti-lipo-peroxide agents, compounds which regenerate oxidized vitamin E, anti-hydroxyl-radical agents, anti-singlet-oxygen agents, anti-superoxide-anion-radical agents and UVA and UVB screening agents.

14. The composition of claim 8, wherein said adjuvants are gelling agents, preserving agents, opacifiers, emulsifiers, co-emulsifiers, fragrances, solubilizing agents, peptizing agents, dyes, pigments and

fillers.

USPATFULL
PI US 5244651 19930914
TI Method of desensitizing hypersensitive dentin
DETD . . . may be used either individually or in combination of two or more. Such examples may include metal salts other than **zinc salt.**
CLM What is claimed is:
. . . one or more compounds selected from the group consisting of glucose-1-phosphate, glucose-6-phosphate, mannose-6-phosphate, galactose-6-phosphate, fructose-6-phosphate, glucose-1,6-diphosphate, fructose-1,6-diphosphate, .alpha.-glycerophosphate, .beta.-glycerophosphate, sucrose **phosphate**, **ascorbic acid phosphate**, sorbitol **phosphate**, phosphorilated polyglycerine, phosphorilated polyethylene glycol, and their water-soluble salts.

. . . one or more compounds selected from the group consisting of glucose-1-phosphate, glucose-6-phosphate, mannose-6-phosphate, galactose-6-phosphate, fructose-6-phosphate, glucose-1,6-diphosphate, fructose-1,6-diphosphate, .alpha.-glycerophosphate, .beta.-glycerophosphate, sucrose **phosphate**, **ascorbic acid phosphate**, sorbitol **phosphate**, phosphorilated polyglycerine, phosphorilated polyethylene glycol, and their water-soluble salts.

1. A method of desensitizing hypersensitive dentin comprising treating teeth of patients suffering from hypersensitive dentin with a colloid p

L9 ANSWER 2 OF 4 USPATFULL
PI US 5935596 19990810
TI Delivery of skin benefit agents via adhesive strips
AB . . . adhesivity. Skin agents delivered through the adhesive strip include vitamins, herbal extracts, alpha- and beta-hydroxycarboxylic acids, ceramides, anti-inflammatories, antimicrobials, vasoconstrictors, **zinc salts** and mixtures thereof. The strips are sealably enclosed within a pouch for purposes of moisture protection.
SUMM . . . including an active selected from the group consisting of vitamins, herbal extracts, alpha- and beta-hydroxycarboxylic acids, ceramides, anti-inflammatories, antimicrobials, vasoconstrictors, **zinc salts** and mixtures thereof; the composition increasing in tackiness upon being wetted just prior to use thereby enhancing the composition adhesivity. . .
SUMM . . . Actives covered by the present invention are vitamins, herbal extracts, alpha- and beta-C.sub.1 -C.sub.30 hydroxycarboxylic acids, ceramides, anti-inflammatories, anti-microbials, vasoconstrictors, **zinc salts** and mixtures thereof.
SUMM . . . (e.g. benzoyl peroxide) and mixtures. Vasoconstrictors are illustrated by compounds such as papaverine, yohimbine, visnadin, khellin, bebellin and nicotinate derivatives. **Zinc salts** which may be effective include zinc thaproline, zinc chloride, zinc sulfate, zinc phenolsulfonate and zinc pyrithione. Other substances within one. . .
CLM What is claimed is:
. . . and an active selected from the group consisting of vitamins, herbal extracts, alpha- and beta-hydroxycarboxylic acids, ceramides, anti-inflammatories. antimicrobials, vasoconstrictors, **zinc salts** and mixtures thereof; the composition increasing in tackiness upon being wefted just prior to use thereby enhancing the composition adhesivity. . .

3. The product according to claim 2 wherein the Vitamin C is selected from the group consisting of **ascorbic acid**, magnesium ascorbyl **phosphate**, ascorbyl palmitate, L-ascorbyl stearate dehydroascorbic acid and combinations thereof.

1. A cosmetic product for delivery of skin actives comprising: (A) a strip comprising: (i) a flexible substrate sheet; and (ii) a dry composition deposited onto said substrate sheet, the composition containing from 75 to 99% of a poly(methyl vinyl ether/maleic anhydride) copolymer and an active selected from the group consisting of vitamins, herbal extracts, alpha- and beta-hydroxycarboxylic acids, ceramides, anti-inflammatories. antimicrobials, vasoconstrictors, **zinc salts** and mixtures thereof; the composition increasing in tackiness upon being wefted just prior to use thereby enhancing the composition adhesivity to skin; and (B) a pouch sealably enclosing the strip.

2. The product according to claim 1 wherein the vitamins selected from the group consisting of Vitamin A, Vitamin B, Vitamin C, Vitamin E and combinations thereof.

3. The product according to claim 2 wherein the Vitamin C is selected from the group consisting of **ascorbic acid**, magnesium ascorbyl **phosphate**, ascorbyl palmitate, L-ascorbyl stearate dehydroascorbic acid and combinations thereof.

4. The product according to claim 1 wherein the amount of active ranges from 0.00001 to 40% by weight.

5. The product according to claim 1 wherein the sheet is rayon.

6. The product according to claim 1 wherein the deposited polymer and substrate sheet are present in a weight ratio ranging from 0.1:1 to 1,000:1.

7. The product according to claim 1 wherein the amount of polymer ranges from 85 to 95% by weight of composition deposited onto the substrate sheet.

L12 ANSWER 3 OF 46 USPATFULL

AB . . . intensity of fine wrinkles in skin affected by intrinsic or photo-induced aging is described. The topical formulation comprises in combination **ascorbic acid**, tyrosine and a non-toxic **zinc salt** and is preferably formulated in a hydrophilic ointment or cream base.

SUMM . . . damaged or aged skin which targets the cells of the supporting dermal layer. We have found that a composition of **ascorbic acid**, tyrosine and a non-toxic **zinc salt**, Preferably zinc sulfate, in a vehicle suitable for topical application, when applied to areas showing the fine wrinkles associated with. . .

CLM What is claimed is:

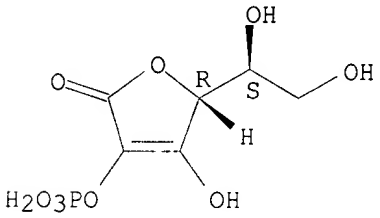
. . . aging or photo-induced aging, said method comprising the step of applying a composition comprising about 2 to about 20% of **ascorbic acid**, about 1 to about 10% tyrosine, and about 0.5 to about 5% of a non-toxic **zinc salt** in a pharmaceutically acceptable carrier, said composition being applied

L2 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2001 ACS
RN 109620-90-8 REGISTRY
CN L-Ascorbic acid, 2-(dihydrogen phosphate), sodium salt (9CI) (CA INDEX NAME)
OTHER NAMES:
CN **L-Ascorbic acid 2-phosphate sodium salt**
CN Sodium L-ascorbate 2-phosphate
FS STEREOSEARCH
MF C6 H9 O9 P . x Na
CI COM
SR CA
LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL
CRN (23313-12-4)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C4O	OC4	5	C4O	16.138.6	1

Absolute stereochemistry.



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64 REFERENCES IN FILE CA (1967 TO DATE)
64 REFERENCES IN FIL

IC ICM C07F009-655
CC 29-7 (Organometallic and Organometalloidal Compounds)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1059298	A1	20001213	EP 2000-111474	20000529
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001026595	A2	20010130	JP 2000-166979	20000605
	BR 2000002585	A	20010102	BR 2000-2585	20000606
	CN 1276377	A	20001213	CN 2000-117991	20000607
PRAI	EP 1999-110851	19990607			

AB A process for sepg. L-ascorbyl 2-monophosphate from a mixt. of the products of the desalting of the product mixt. obtained from the phosphorylation under basic conditions of an L-ascorbic acid salt is described. This process is characterized by passing an aq. soln. of the desalted mixt. contg. amongst other components the desired L-ascorbyl 2-monophosphate through a column of a basic anion exchange resin, with resulting adsorption of the components onto the resin, desorbing amongst other adsorbed components said L-ascorbyl 2-monophosphate from the resin using as the eluent an aq. alkali hydroxide soln., and collecting from the eluate the fraction which contains as its principal dissolved component the desired L-ascorbyl 2-monophosphate in the form of the appropriate mono-alkali metal salt. The so obtained L-ascorbyl 2-monophosphate is esp. stable against thermal and oxidative degrdn. compared with L-ascorbic acid (vitamin C) itself, and is thus suitable as a more stable form of ascorbic acid for use as an additive for foodstuffs, animal feedstuffs and cosmetic products.

ST purifying ascorbyl monophosphate anion exchange resin column
IT Resins

2582 CA
TI Provitamin C. Free radical scavenging and prevention of cell death by a high enrichment of ascorbic acid
AU Hayashi, Saori; Nagao, Norio; Miwa, Nobuhiko
CS Department of Bioresources, Hiroshima University, Japan
SO Roka Yobo Shokuhin no Kaihatsu (1999), 217-234. Editor(s): Yoshikawa, Toshikazu. Publisher: Shi Emu Shi, Tokyo, Japan.
CODEN: 69AHQ6
DT Conference; General Review
LA Japanese
CC 18-0 (Animal Nutrition)
Section cross-reference(s): 1
AB A review with 13 refs. on physiol. functions of provitamin C (Asc2P, Asc2P6Plm, VC-IP, Asc2G) in relation to prevention of aging, covering the antitumor effect, prevention of skin and DNA damage due to UV, etc.
ST review provitamin C physiol function antiaging
IT Aging, animal
Antioxidants
Antitumor agents
(physiol. functions of provitamin C in relation to prevention of aging)
IT 50-81-7, Ascorbic acid, biological studies 23313-12-4, L-Ascorbic acid 2-phosphate 129499-78-1 215363-36-3 327594-27-4
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)
(physiol. functions of provitamin C in relation to prev

AN 134:265258 CA
TI Separation of L-ascorbic acid 2-phosphate from microbial culture using weakly-basic anion exchange resin and preparation of its alkali metal salts
IN Osamura, Akihito; Aramasu, Yoichi; Fujinaga, Katsuki
PA Kyowa Hakko Kogyo Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07F009-655
ICS C12P017-04; C12R001-01
CC 16-5 (Fermentation and Bioindustrial Chemistry)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001089488	A2	20010403	JP 1999-265894	19990920

AB L-Ascorbic acid 2-phosphate (I), useful for drugs, food, and cosmetics, is sepd. from a culture supernatant by passing the supernatant through a weakly-basic anion exchange resin and eluting with an eluent contg. .gtoreq.1 selected from salts and acids. Metal salts of I are prepd. by adsorbing I contained in the above eluent to weakly-basic anion exchange resin and eluting with an eluent contg. .gtoreq.1 alkalies. Prepn. of I Na salt by passing a filtrate of a culture of Sphingomonas trueperi through a WA 10 column, eluting the adsorbed I with NaCl-contg. HCl, passing the eluent through Purolite A 100 (weakly-basic anion exchange resin) column, and eluting with an aq. NaOH soln. was shown.
ST ascorbic acid phosphate sepn Sphingomonas culture basic anion exchanger; weakly basic anion exchanger microbial ascorbic acid phosphate sepn
IT Fermentation
Sphingomonas trueperi
(sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)
IT Anion exchangers
(weakly basic; sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)
IT 7647-01-0, Hydrochloric acid, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(eluent contg. salts and; sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)
IT 7664-93-9, Sulfuric acid, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(eluent contg. sodium chloride and; sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)
IT 631-61-8, Ammonium acetate 7783-20-2, Ammonium sulfate, uses
12125-02-9, Ammonium chloride, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(hydrochloric acid contg., eluent; sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)
IT 7647-14-5, Sodium chloride, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(hydrochloric or sulfuric acid contg., eluent; sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)
IT 23313-12-4P, L-Ascorbic acid 2-phosphate
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)
IT 109620-90-8P, L-Ascorbic acid 2-phosphate sodium salt

RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)

IT 37251-30-2, Duolite A 7 42612-26-0, Diaion WA 10 55914-96-0, Diaion WA 30 178359-33-6, Purolite A 100
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)

IT 1310-73-2, Sodium hydroxide, reactions
RL: RCT (Reactant)
(sepn. of L-ascorbic acid 2-phosphate from microbial culture and prepn. of its alkali metal salts using weakly-basic anion exchange resins)

L2 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2001 ACS
RN 23313-12-4 REGISTRY
CN L-Ascorbic acid, 2-(dihydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Ascorbic acid 2-phosphate
CN **L-Ascorbic acid 2-phosphate**
CN **L-Ascorbic acid 2-phosphate (ester)**
CN L-Ascorbyl-2-phosphate
FS STEREOSEARCH
DR 172173-78-3, 81877-56-7
MF C6 H9 O9 P
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAPLUS, CASREACT, CHEMCATS, DDFU, DRUGU, EMBASE, IPA, MEDLINE, PROMT, TOXLINE, TOXLIT, USPATFULL, VETU
(*File contains numerically searchable property data)

AN 134:29559 CA
TI Process for purifying L-ascorbyl 2-monophosphate
IN Noesberger, Paul
PA F. Hoffmann-La Roche A.-G., Switz.
SO Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07F009-655
CC 29-7 (Organometallic and Organometalloidal Compounds)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1059298	A1	20001213	EP 2000-111474	20000529
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001026595	A2	20010130	JP 2000-166979	20000605
	BR 2000002585	A	20010102	BR 2000-2585	20000606
	CN 1276377	A	20001213	CN 2000-117991	20000607

PRAI EP 1999-110851 19990607

AB A process for sepg. L-ascorbyl 2-monophosphate from a mixt. of the products of the desalting of the product mixt. obtained from the phosphorylation under basic conditions of an L-ascorbic acid salt is described. This process is characterized by passing an aq. soln. of the desalted mixt. contg. amongst other components the desired L-ascorbyl 2-monophosphate through a column of a basic anion exchange resin, with resulting adsorption of the components onto the resin, desorbing amongst other adsorbed components said L-ascorbyl 2-monophosphate from the resin using as the eluent an aq. alkali hydroxide soln., and collecting from the eluate the fraction which contains as its principal dissolved component the desired L-ascorbyl 2-monophosphate in the form of the appropriate mono-alkali metal salt. The so obtained L-ascorbyl 2-monophosphate is esp. stable against thermal and oxidative degrdn. compared with L-ascorbic acid (vitamin C) itself, and is thus suitable as a more stable form of ascorbic acid for use as an additive for foodstuffs, animal feedstuffs and cosmetic products.

ST purifying ascorbyl monophosphate anion exchange resin column
IT Resins
RL: PRP (Properties)
(anion exchange; process for purifying ascorbyl monophosphate)
IT Anion exchangers
(process for purifying ascorbyl monophosphate)
IT 50-81-7, L-Ascorbic acid, reactions
RL: RCT (Reactant)
(phosphorylation of)
IT 68536-31-2P 109620-90-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and desalting of)
IT 23313-12-4P
RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)
(process for purifying ascorbyl monophosphate)

RE.CNT 6
(1) F Hoffmann-La Roche Ag; EP 0866069 A 1998 CAPLUS
(2) Kuniaki Shimbo; US 4724262 A 1988 CAPLUS
(3) Lee, C; CARBOHYDR RES 1978, V67(1), P127 CAPLUS
(4) Pola Kasei Kkk; JP 59106494 A 1984 CAPLUS
(5) Showa Denko K K; JP 62103096 A 1987
(6) Takeda Chem Ind; JP 59051293 A 1924 CAPLUS

AN 134:61205 CA
TI Study of chemical evaluation of the activity of skin lighteners
AU Liu, Yu-hong; Li, Cai-guang; Peng, Jin-luan
CS Department of Chemical Engineering, Beijing Technology and Business Universit, Beijing, 100037, Peop. Rep. China
SO Jingxi Huagong (2000), 17(6), 318-320, 368
CODEN: JIHUFJ; ISSN: 1003-5214
PB Jingxi Huagong Bianjibu
DT Journal
LA Chinese
CC 62-4 (Essential Oils and Cosmetics)
AB The activity of six kinds of skin lighteners in common use were evaluated and compared with hydroquinone by chem. method, i.e. by detg. inhibitory activity against tyrosinase. The results were: (1) The order of highest inhibitory activity of each skin lighteners against tyrosinase (for 3.5 h) was that hydroquinone (98.3%) > Biowhite (90.5%) > Vc (88.2%) .gtoreq. arbutin (87.8%) .gtoreq. kojic acid (86.2%) > sodium L-ascorbic acid-2-phosphate (home-made, 72.9%) .gtoreq. sodium L-ascorbic. acid-2-phosphate (made. abroad, 72.7%) > magnesium L-ascorbic acid-2-phosphate (41.1%) .The relation between activity evaluation of lightener and the value of inhibitory. activity against tyrosinase was discussed. (2) ICmax (for. 3.5h) of each lightener was obtained, (3) The diagram of relation between inhibitory activities against tyrosinase and reacting time of lighteners showed that the inhibitory activities against tyrosinase increased with the reacting time of lighteners. The effect of skin lightening would decrease without enough reacting time. It was confirmed to be an effective and economical method to evaluate lighteners with self-made tyrosinase system.
ST skin lightening cosmetic tyrosinase inhibitor
IT Cosmetics
(skin-lightening; study of chem. evaluation of the activity of skin lighteners)
IT 9002-10-2, Tyrosinase
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(inhibitor; study of chem. evaluation of the activity of skin lighteners)
IT 50-81-7, Vitamin c, biological studies 123-31-9, Hydroquinone, biological studies 497-76-7, Arbutin 501-30-4, Kojic acid 23666-04-8 109620-90-8
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(study of ch

ULL

SUMM treating an acidic aqueous solution containing **ascorbic acid-2-phosphate** with a porous adsorbent to adsorb said **ascorbic acid-2-phosphate**, and

SUMM treating the adsorbent with a basic aqueous solution of an alkali metal, alkaline earth metal, aluminum or **zinc salt** of organic acid, or substituted ammonium ions selected from the group consisting of cycloalkylamine ions and cyclic amine ions to elute the metal salt or substituted ammonium salt of **ascorbic acid-2-phosphate.**

SUMM In the case of producing a metal salt or substituted ammonium salt of **ascorbic acid-2-phosphate**, an adsorbent adsorbing **ascorbic acid-2-phosphate** is treated with a basic aqueous solution of an alkali metal, alkaline earth metal, aluminum or **zinc salt** of organic acid, or a substituted ammonium ions selected from the group consisting of cycloalkylammonium ions and cyclic ammonium ions to elute the metal salt or substituted ammonium salt of **ascorbic acid-2-phosphate.**

SUMM In the case of eluting the desired **ascorbic acid-2-phosphate** salt directly, for example, in the form of magnesium **ascorbic acid-2-phosphate** directly, a basic aqueous solution containing magnesium ions is used as an eluent for the elution. Specific examples of such. . .

CLM What is claimed is:

1. A process for producing a metal salt or substituted ammonium salt of **ascorbic acid-2-phosphate**, which comprises treating an acidic aqueous solution containing **ascorbic acid-2-phosphate** with a porous adsorbent to adsorb said **ascorbic acid-2-phosphate**, treating the adsorbent with a basic aqueous solution of an alkali metal, alkaline earth metal, aluminum or **zinc salt** of an organic acid, or substituted ammonium ions selected from the group consisting of cycloalkylammonium ions and cyclic ammonium ions to elute the corresponding metal salt or substituted ammonium salt of **ascorbic acid-2-phosphate**, and isolating said metal salt or substituted ammonium salt of **ascorbic acid-2-phosphate.**

AB Metal salts or substitutted or non-substituted ammonium salts of ascorbic acid derivatives can be produced in high yield by treating an acidic aqueous solution containing ascorbic acid-2-phosphate or ascorbic acid-2-sulfate with a porous adsorbent such as activated carbon, followed by treating the adsorbent with a basic aqueous solution containing e.g. a metal salt of an organic acid or substituted or non-substituted ammonium salt ion to elute the desired salt of ascorbic acid derivative.

ACCESSION NUMBER: 96:41355 USPATFULL

TITLE: Process for producing ascorbic acid derivative

INVENTOR(S): Sano, Atsunori, Kawagoe, Japan
Okamoto, Kuniaki, Kawagoe, Japan
Ebashi, Jun, Kawagoe, Japan

PATENT ASSIGNEE(S): Wako Pure Chemical Industries, Ltd., Osaka, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5516919		19960514
APPLICATION INFO.:	US 1995-423988		19950418 (8)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1994-113570	19940428

DOCUMENT TYPE: Utility

L7 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2001 ACS
AN 1999:3414 CAPLUS
DN 130:52680
TI Preparation of **ascorbic acid** 2-**phosphate** **zinc** salt and process for manufacturing the same
IN Suzuki, Masahiro; Tsuzuki, Toshi; Itoh, Shinobu; Ogata, Eiji
PA Showa Denko K. K., Japan
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07F009-655
ICS A23L003-3544; A23L003-3553; A61K031-665; A61K007-00; A23K003-00
CC 33-8 (Carbohydrates)
Section cross-reference(s): 10, 78
FAN.CNT 1

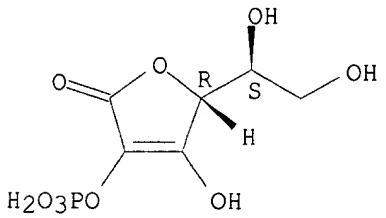
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 884321	A1	19981216	EP 1998-110676	19980610
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11001487	A2	19990106	JP 1997-153972	19970611
PRAI JP 1997-153972		19970611		

AB Antimicrobial L-**ascorbic acid** 2-**phosphate** **zinc** salt and a salt hydrate thereof having excellent soly. and exhibiting good stability even under weakly acidic conditions. Also disclosed is a process of manufg. L-**ascorbic acid** 2-**phosphate** **zinc** salt by displacing a cation of a salt of an L-**ascorbic acid** 2-**phosphate** other than a **zinc** salt with a zinc cation. Further disclosed is a compn. contg. L-**ascorbic acid** 2-**phosphate** **zinc** salt or a salt hydrate thereof as an active ingredient.
ST bactericide **ascorbic acid phosphate** **zinc** prepn; stability storage **ascorbic acid phosphate zinc**
IT Antibacterial agents
(prepn. of **ascorbic acid phosphate** **zinc** salt and process for manufg. the same)
IT 217483-97-1P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of **ascorbic acid phosphate** **zinc** salt and process for manufg. the same)
IT 108910-78-7, L-Ascorbic acid **phosphate**, magnesium salt
128808-26-4, L-Ascorbic acid **phosphate**, sodium salt
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(prepn. of **ascorbic acid phosphate** **zinc** salt and process for manufg. the same)
IT 50-81-7, L-**Ascorbic acid**, reactions
RL: RCT (Reactant)
(prepn. of **ascorbic acid phosphate** **zinc** salt and process for manufg. the same)
RE.CNT 2
RE
(1) Hinkley, D; US 3671549 A 1972
(2) Takeda Chemical Ind; FR 1489249 A 1967 CAPLUS

=>

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN **217483-97-1** REGISTRY
CN L-Ascorbic acid, 2-(dihydrogen phosphate), zinc salt (2:3) (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C6 H9 O9 P . 3/2 Zn
SR CA
LC STN Files: CA, CAPLUS, TOXLIT
CRN (23313-12-4)

Absolute stereochemistry.



●3/2 Zn

4 REFERENCES IN FILE CA (1967 TO DATE)
4 REFERENCES IN FILE CAPLUS (1967 TO DATE)

=> SET NOTICE LOGIN DISPLAY

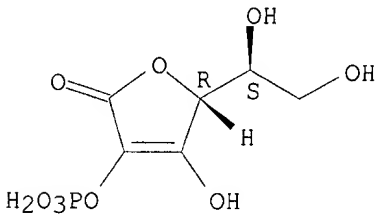
NOTICE SET TO OFF FOR DISPLAY COMMAND
SET COMMAND COMPLETED

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2001 ACS
RN **217483-97-1** REGISTRY
CN L-Ascorbic acid, 2-(dihydrogen phosphate), zinc salt (2:3) (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C6 H9 O9 P . 3/2 Zn
SR CA
LC STN Files: CA, CAPLUS, TOXLIT
CRN (23313-12-4)

Ring System Data

Elemental Analysis EA	Elemental Sequence ES	Size of the Rings SZ	Ring System Formula RF	Ring Identifier RID	RID Occurrence Count
C4O	OC4	5	C4O	16.138.6	1

Absolute stereochemistry.



●3/2 Zn

4 REFERENCES IN FILE CA (1967 TO DATE)
4 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1

AN 133:140258 CA
TI Topical pharmaceuticals containing ascorbate salts
IN Masatsuji, Eiko; Tsuzuki, Toshi; Ito, Shinobu; Ogata, Eiji
PA Showa Denko K. K., Japan
SO Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM A61K031-375
ICS A61K033-30; A61P017-10
CC 63-6 (Pharmaceuticals)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1023897	A2	20000802	EP 2000-101431	20000125
	EP 1023897	A3	20001025		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000212082	A2	20000802	JP 1999-17478	19990126
PRAI	JP 1999-17478	19990126			

AB A dermal agent for preventing or treating acne, comprises an ascorbic acid deriv. which releases in vivo ascorbic acid, and a zinc salt or a zinc salt of the ascorbic acid-2-phosphate, and a compn. contg. tretinoin and an ascorbic acid deriv. or a salt. The irritation of tretinoin is relieved by using the dermal agent and tretinoin in combination. Thus, ascorbic acid-2-phosphate zinc salt (I) was prepd. by the reaction of L-ascorbyl 2-phosphate magnesium salt with Zncl2. A lotion contained glyceryl monostearate 1.0, iso-Pr palmitate 3.0, anhyd. lanolin 1.0, glycerin 5.0, methylparaben 0.1, stearyl cocaminoformyl pyridinium chloride, I 3.0, and Glycyrrhiza nanaking ext. 0.1% by wt. and water to 100%.

ST topical pharmaceutical ascorbate zinc salt

IT Propionibacterium
Propionibacterium acnes
Skin
Staphylococcus
Staphylococcus aureus
(topical pharmaceuticals contg. ascorbate salts)

IT Acrylic polymers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(topical pharmaceuticals contg. ascorbate salts)

IT 9001-54-1, Hyaluronidase 9001-62-1, Lipase
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(inhibitors; topical pharmaceuticals contg. ascorbate salts)

IT 7646-85-7, Zinc chloride (ZnCl2), reactions
RL: RCT (Reactant)
(topical pharmaceutica ls contg. ascorbate salts)

IT 217483-97-1P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(topical pharmaceuticals contg. ascorbate salts)

IT 50-81-7D, L-Ascorbic acid, salts 23313-12-4D, L-Ascorbic acid 2-phosphate, salts 129499-78-1
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(topical pharmaceuticals contg. ascorbate salts)

IT 84309-23-9
RL: RCT (Reactant)
(topical pharmaceuticals contg. ascorbate salts)

IT 79-06-1D, Acrylamide, polymers 302-79-4, Tretinoin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(topical pharmaceuticals contg. ascorbate salts)

REFERENCE 2

AN 133:79034 CA

TI Chemical peeling compositions containing L-ascorbic acid derivatives and chemical peeling method

IN Ito, Shinobu; Ogata, Eiji

PA Showa Denko K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM A61K031-375
ICS A61K007-00; A61P017-00; A61P017-10; A61P017-02; A61P017-16; A61K031-19; A61K045-00

CC 62-4 (Essential Oils and Cosmetics)
Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000186036	A2	20000704	JP 1998-363316	19981221

PRAI JP 1998-295169 19981016

AB The compns., useful for treatment of wrinkle, spots, freckles, liver spot, acne, scars due to acne and burn, rough skin, pigmentation, decrease in elasticity of hair and nail, etc., contain chem. peeling agents, preferably, 2-hydroxycarboxylic acids or their derivs., and L-ascorbic acid (I) or its derivs. to prevent penetration of the agents to skin in depth and reduce skin irritation. A chem. peeling method involves application of a 1st agent contg. chem. peeling agents to skin and application of a 2nd agent contg. I or its derivs. once or several times before or after the 1st agents. A liq. contg. sorbitol 4.0, dipropylene glycol 6.0, polyethylene glycol 1500 5.0, polyoxyethylene oleyl ether 0.5, Me cellulose 0.2, citric acid 0.01, NaOH, Na L-ascorbic acid 2-phosphate 5.0, Na dl-.alpha.-tocopherol phosphate 0.5, glycolic acid 1.0, Cl3CCO2H 1.0%, and H2O balance was prepd. Antiwrinkle effect and skin irritation-inducing action of the compn. was examd. in 100 volunteers.

ST skin chem peeling hydroxycarboxylic acid ascorbate irritation redn; glycolic acid chem peeling agent ascorbate irritation redn

IT Cosmetics
(chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydroxy; chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

IT Skin, disease
(pigmentation; chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

IT Hair
Nail (anatomical)
(roughness, fragility, decreased gloss and elasticity, treatment of; chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

IT Acne
Burn
(scar from, treatment of; chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

IT Drug delivery systems
(topical; chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

IT Skin, disease
(treatment of; chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

IT 50-21-5, biological studies 50-81-7, Ascorbic acid, biological studies 50-81-7D, L-Ascorbic acid, derivs. 55-10-7 76-03-9, Trichloroacetic acid, biological studies 76-93-7, biological studies 77-92-9, biological studies 79-14-1, biological studies 80-69-3, Tartronic acid 87-69-4 87-73-0, Saccharic acid 90-64-2, Mandelic acid 96-82-2, Lactobionic acid 127-17-3, Pyruvic acid, biological studies 156-06-9, Phenylpyruvic acid 298-12-4, Glyoxylic acid 306-23-0 320-77-4, Isocitric acid 328-51-8, 2-Ketooctanoic acid 473-81-4, Glyceric acid 492-86-4 515-30-0, Atrolactic acid 526-95-4, D-Gluconic acid 526-99-8, Mucic acid 544-57-0, Cerebronic acid 552-63-6, Tropic acid 594-61-6 597-44-4, Citramalic acid 599-04-2, Pantoyl lactone 600-15-7, 2-Hydroxybutanoic acid 600-18-0, 2-Ketobutanoic acid 600-22-6, Methyl pyruvate 611-73-4, Benzoylformic acid 617-31-2, 2-Hydroxypentanoic acid 617-35-6, Ethyl pyruvate 617-73-2, 2-Hydroxyoctanoic acid 629-22-1, 2-Hydroxyoctadecanoic acid 636-69-1, 2-Hydroxyheptanoic acid 666-99-9, Agaricic acid 764-67-0, 2-Hydroxyhexadecanoic acid 775-01-9 828-01-3 922-68-9 1112-33-0, Pantoic acid 1198-69-2 1198-84-1 1603-79-8, Ethyl benzoylformate 1713-85-5, 3-Chlorolactic acid 1821-02-9, 2-Ketopentanoic acid 2492-75-3, 2-Ketohexanoic acid 2507-55-3, 2-Hydroxytetradecanoic acid 2782-07

-2 2984-55-6, 2-Hydroxydodecanoic acid 3063-04-5, Glucoheptonolactone 3327-63-7 3327-64-8, Gulonolactone 3695-24-7 3909-12-4, Threonic acid 3956-93-2, Idonic acid 5393-81-7, 2-Hydroxydecanoic acid 6064-63-7, 2-Hydroxyhexanoic acid 6362-58-9 6613-41-8, Ethyl phenylpyruvate 6803-09-4 6906-37-2, Mannonic acid 6915-15-7 6949-98-0, Aleuritic acid 7007-81-0, Trethocanic acid 10366-82-2 13088-48-7, 2-Ketoheptanoic acid 13382-27-9, Galactonic acid 13403-16-2, D-galacto-2-Heptulose 13752-83-5, Arabinonic acid 13752-84-6, Erythronic acid 15206-55-0, Methyl benzoylformate 15896-36-3, 2-Hydroxynonanoic acid 16742-48-6, 2-Hydroxyeicosanoic acid 17812-24-7, Ribonic acid 17828-56-7, Xylonic acid 19790-86-4, 2-Hydroxyundecanoic acid 20246-52-0, Talonic acid 20246-53-1, Gulonic acid 20279-43-0, Propyl pyruvate 23313-12-4, L-Ascorbic acid 2-phosphate 23351-51-1, Glucoheptonic acid 24871-35-0, Altronic acid 28223-40-7, Lyxonic acid 28223-42-9, Allonic acid 28700-18-7, Galacturonolactone 32449-92-6, Glucuronolactone 36413-60-2, Quinic acid 38742-06-2, Hexulosonic acid 41172-04-7, Methyl 2-ketooctanoate 66651-98-7, L-Ascorbic acid 2-sulfate sodium salt 73572-07-3 80490-57-9, 2-Ketododecanoic acid 84309-23-9 84413-06-9 109620-90-8, L-Ascorbic acid 2-phosphate sodium salt 129499-78-1, L-Ascorbic acid 2-glucoside 215363-36-3 215363-39-6 217483-97-1 279678-78-3 279684-13-8
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(chem. peeling compns. contg. hydroxycarboxylic acids as active agents and L-ascorbic acid derivs. to reduce skin irritation)

REFERENCE 3

AN 132:318038 CA
TI Ascorbic acid-2-phosphate zinc salt and other salts as antiulcer agents
IN Ito, Shinobu; Tsuchiya, Toshiyuki; Masatsuji, Eiko; Tsudzuki, Satoshi; Ogata, Eiji
PA Showa Denko K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A61K031-665
ICS A61P001-04; A61P001-00; A61P031-04; C07F009-655
CC 1-9 (Pharmacology)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000128788	A2	20000509	JP 1998-298335	19981020

AB Ascorbic acid-2-phosphate zinc salt and other salts are claimed as antiulcer agents for prevention and treatment of digestive tract diseases e.g. gastritis, hepatitis, and esp. ulcer from Helicobacter pylori. The antiulcer effects were tested in animal models.
ST ascorbate phosphate salt antiulcer digestive disease
IT Antiulcer agents
Helicobacter pylori
Hepatitis
(ascorbic acid-2-phosphate zinc salt and other salts as antiulcer agents)
IT Digestive tract
(disease; ascorbic acid-2-phosphate zinc salt and other salts as antiulcer agents)
IT Stomach, disease
(gastritis; ascorbic acid-2-phosphate zinc salt and other salts as antiulcer agents)
IT 217483-97-1P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP

(Preparation); USES (Uses)
(ascorbic acid-2-phosphate zinc salt and other salts as antiulcer agents)

IT 23313-12-4D, Ascorbic acid-2-phosphate, salts
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(ascorbic acid-2-phosphate zinc salt and other salts as antiulcer agents)

IT 9002-13-5, Urease
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(from Helicobacter pylori; ascorbic acid-2-phosphate zinc salt and other salts as antiulcer agents)

REFERENCE 4

AN 130:52680 CA
TI Preparation of ascorbic acid 2-phosphate zinc salt and process for manufacturing the same
IN Suzuki, Masahiro; Tsuzuki, Toshi; Itoh, Shinobu; Ogata, Eiji
PA Showa Denko K. K., Japan
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07F009-655
ICS A23L003-3544; A23L003-3553; A61K031-665; A61K007-00; A23K003-00
CC 33-8 (Carbohydrates)
Section cross-reference(s): 10, 78
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 884321	A1	19981216	EP 1998-110676	19980610
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11001487	A2	19990106	JP 1997-153972	19970611
PRAI	JP 1997-153972		19970611		

AB Antimicrobial L-ascorbic acid 2-phosphate zinc salt and a salt hydrate thereof having excellent soly. and exhibiting good stability even under weakly acidic conditions. Also disclosed is a process of manufg. L-ascorbic acid 2-phosphate zinc salt by displacing a cation of a salt of an L-ascorbic acid 2-phosphate other than a zinc salt with a zinc cation. Further disclosed is a compn. contg. L-ascorbic acid 2-phosphate zinc salt or a salt hydrate thereof as an active ingredient.
ST bactericide ascorbic acid phosphate zinc prepn; stability storage ascorbic acid phosphate zinc
IT Antibacterial agents
(prepn. of ascorbic acid phosphate zinc salt and process for manufg. the same)
IT 217483-97-1P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(prepn. of ascorbic acid phosphate zinc salt and process for manufg. the same)
IT 108910-78-7, L-Ascorbic acid phosphate, magnesium salt 128808-26-4, L-Ascorbic acid phosphate, sodium salt
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(prepn. of ascorbic acid phosphate zinc salt and process for manufg. the same)
IT 50-81-7, L-Ascorbic acid, reactions
RL: RCT (Reactant)
(prepn. of ascorbic acid phosphate zinc salt and process for manufg. the same)

RE.CNT 2
(1) Hinkley, D; US 3671549 A 1972
(2) Takeda Chemical Ind; FR 1489249 A 1967 CAPLUS

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